

*Streptococcus, Fibribacter, Ruminococcus, Pediococcus, Cytophaga, Cellulomonas, Bacteroides, and Clostridium*] animal cells, insect cells, fungal cells, and yeast cells.

3. (Currently Amended) The [Gram-positive bacterium,] eukaryotic cell according to claim 2, wherein said [host] cell is a [*Bacillus sp*]fungal cell.

4. (Canceled)

5. (Currently Amended) The [Gram-positive bacterium,] cell according to claim 1, which has been transformed with *Z. mobilis* genes encoding alcohol dehydrogenase and pyruvate decarboxylase.

6. (Currently Amended) The [Gram-positive bacterium] cell according to claim 1, wherein said [bacterium] cell is further transformed with a gene encoding an enzyme which degrades oligosaccharides.

7. (Currently Amended) The [Gram-positive bacterium,] cell according to claim 6, wherein said enzyme which degrades oligosaccharides is a polysaccharase.

8. (Currently Amended) The [Gram-positive bacterium] cell according to claim 7, wherein said polysaccharase is selected from the group consisting of cellulolytic, xylanolytic, and starch-degrading enzymes.

9. (Currently Amended) The [Gram-positive bacterium,] cell according to claim 1, wherein said heterologous genes are incorporated onto the chromosome of said [bacterium] cell.

10. (Currently Amended) A method for the production of ethanol, said method comprising transforming a [Gram-positive bacterial host] eukaryotic cell with heterologous genes encoding pyruvate decarboxylase and alcohol dehydrogenase wherein said genes are expressed at sufficient levels to result in the production of ethanol as a fermentation product.

11. (Currently Amended) The method, according to claim 10, wherein said [host] cell is selected from the group consisting of [*Bacillus*, *Lactobacillus*, *Streptococcus*, *Fibribacter*, *Ruminococcus*, *Pediococcus*, *Cytophaga*, *Cellulomonas*, *Bacteroides*, and *Clostridium*] animal cells, insect cells, fungal cells, and yeast cells.

12. (Currently Amended) The method, according to claim 11, wherein said [host] cell is a [*Bacillus sp*] fungal cell.

13. (Canceled)

14. (Currently Amended) The method, according to claim 10, wherein said [Gram-positive bacterium] cell has been transformed with *Z. mobilis* genes encoding alcohol dehydrogenase and pyruvate decarboxylase.

15. (Currently Amended) The method, according to claim 10, wherein said [bacterium] cell is further transformed with a gene encoding an enzyme which degrades oligosaccharides.

16. (Original) The method, according to claim 15, wherein said enzyme which degrades oligosaccharides is a polysaccharase.

17. (Currently Amended) A method for reducing the accumulation of acidic metabolic products in the growth medium of [Gram-positive bacteria] a eukaryotic cell, said method comprising transforming said [bacteria] cell with heterologous genes which express alcohol dehydrogenase and pyruvate decarboxylase at sufficient levels to result in the production of ethanol as a fermentation product.

18. (Canceled)